

Diagnosing epilepsy

Tests explained

An initial medical examination will often be normal and the results of any further investigations will be interpreted with reference to the eyewitness's detailed history of the event.

Further investigations may include:

- EEG
- Scan
- Blood test

EEG (Electroencephalogram)

This test records the brain activity by picking up electrical signals given off by the communicating nerve cells. The EEG cannot prove or exclude the diagnosis of epilepsy it can only give information about the electrical activity of the brain during the period of recording. Many people with epilepsy will have a normal trace. Only if patterns characteristic of epilepsy are seen during the routine recording, is the EEG of value.

Routine EEG

Small contacts about the size of shirt buttons (electrodes) are placed on the scalp and the signals are amplified and recorded onto a computer. It is a painless procedure that takes about 20 – 30 minutes.



Recordings are made when the child is awake with eyes closed, awake with eyes open, with a strobe light flashing, and with the child being asked to breathe heavily (hyperventilate).

There are also occasions when it is requested that you deprive your child of sleep prior to the EEG in the hope that a recording may be made when your child is asleep. On occasions sedation may be used, but this will usually be discussed prior to the EEG appointment.

Ambulatory EEG

This is an EEG that is recorded whilst your child carries on their normal activities. With prolonged ambulatory recording, better detection of events may be achieved. An ambulatory EEG allows monitoring to be recorded for several hours or days. Electrodes are attached in a similar way

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and the wires connected to a small cassette tape. Your child can then continue with his/her normal routine at home or school, and a sleep record can be obtained. If a seizure or 'abnormal' event occurs, a button attached to the equipment can be pressed by an observer and this will highlight the area on the EEG.

Video Telemetry

The purpose is to record a seizure with a simultaneous video recording and a time matched EEG, so that the nature of any seizures or episodes can be clarified. It involves an in-patient stay (for approximately three days) for your child in certain hospitals or specialist centres. The aim is to capture day and night time events on video and EEG, so that the episodes can be confirmed or rejected as being epileptic in nature. This investigation can also be useful in pre surgical evaluation if surgery is thought to be an option.

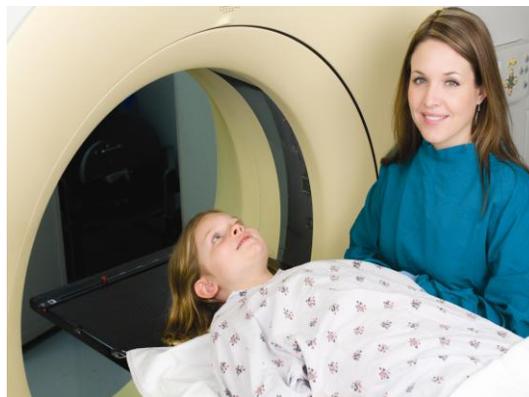
Scans:

Some children will have a CT or MRI brain scan, either of which may help identify a cause of epilepsy.

CT scan (Computerised Tomography)

This scan produces very detailed cross-sectioned images of the brain onto a computer. Unlike normal X-ray studies, CT scans show not just bone, but also soft

tissues including the various components of the brain. It may reveal any obvious structural abnormality or damage which may be present.



MRI scan (Magnetic Resonance Imaging)

This scan uses magnetic fields rather than X-rays to form an image of the structure of the brain. It is the scan of choice for children as it is sharper, and can reveal far smaller structural abnormalities, than a CT scan. Some children may need sedation or anaesthesia prior to an MRI scan as they will have to lie still for some time. Some children may be unsettled by the noise or claustrophobic feeling of being in the scanner.

Blood tests:

Various blood tests may be performed either to exclude other diagnoses or in an attempt to find the underlying cause of the epilepsy. If these tests should be needed the blood required for the tests can usually be taken in one go.

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